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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,386	10/15/2003	J. Christopher Moulder	A03P1070	2107
36802	7590	07/05/2006	EXAMINER	
PACESETTER, INC. 15900 VALLEY VIEW COURT SYLMAR, CA 91392-9221			MALAMUD, DEBORAH LESLIE	
			ART UNIT	PAPER NUMBER
			3766	

DATE MAILED: 07/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/687,386

Applicant(s)

MOULDER ET AL.

Examiner

Deborah Malamud

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/15/03, 3/22/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 10 is objected to because of the following informalities: in line 2 of the claim, "each leg including output voltage modulating device" should be changed either to "an output voltage modulating device" or "output voltage modulating devices."

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear what the applicant means by the phrase "back diodes" in line 2 of the claim.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-7, 9-11, 13-17, 20-23 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Mulhauser (U.S. 6,208,896). Regarding claims 1-2, 4, 13 and 20,

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Mulhauser discloses (col. 3, lines 32-34) a defibrillation waveform generator that includes a "rapid-discharge energy storage device (typically a capacitor), a controller, and an amplifier." The amplifier (col. 4, lines 17-32) is a switch-mode amplifier that is responsive to one or more control-signals that are pulse-width modulated; this switch-mode amplifier (col. 11, lines 20-40; Figures 4 and 5) includes a biphasic controller (130), which is implemented by an H-bridge made up of switches (470, 472, 474, and 476)." Biphasic converter 130, responsive to the control signal, produces output voltage (232B, Figure 3). The examiner considers this to be a voltage supply circuit that provides output voltage, and a control circuit coupled to the voltage supply and comprising an H-bridge and pulse-width modulation circuit.

6. Regarding claims 3 and 14, Mulhauser discloses (col. 12, lines 36-43) "control signal (505) controls the states of H-bridge switches 470 and 476). In the illustrative example, control signal 505 is a voltage waveform indicating that, from initial time (501) to a subsequent time (503), a control voltage applied to switches (470 and 476) is in a low state that is arbitrarily assumed for illustrative purposes to indicate that these switches are open." The examiner considers this to be a pulse-width modulation circuit coupled to the first switching device of each leg of the H-bridge.

7. Regarding claim 5, Mulhauser discloses (col. 12, lines 55-61) "biphasic conversion is accomplished by switching H-bridge switches (472 and 474) off at approximately the same time switches (470 and 476) are switched on. Thus, in the illustrative implementation, control signal (510) indicates that the switches 472 and 474 are initially closed, as indicated by the initial high voltage (511, e.g., five volts). At time

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(503), these switches are opened, as indicated by low voltage (512).” The examiner considers this to be a polarity control circuit coupled to the second switching device of each leg of the H-bridge.

8. Regarding claims 6, 16 and 21, Mulhauser discloses (col. 17, lines 50-68) controller (115) that “may compare a desired amplitude of biphasic output voltage to an indicator of actual biphasic output voltage provided by feed back sensor.” If there is a difference between these amplitudes, it is noted to be an error value, and the controller “brings the actual value into conformance with the desired value by changing one or both of the control signals to the step-up or step-down converters of amplifier.”

9. Regarding claim 7 and 17, Mulhauser discloses (col. 11, lines 59-64) capacitor (460) is connected, via boost diode (450) to two legs of the H-bridge, consisting of switches 470 and 472.

10. Regarding claim 9, Mulhauser discloses (col. 11, lines 42-55; Figure 4) an inductor (430) that is connected to buck diode (420) and to the capacitor (460) and the H-bridge.

11. Regarding claims 10-11, 15, 22-23 and 25, Mulhauser discloses (col. 12, lines 37-45) the input voltage control signal helps modulate the output voltage signal by indicating whether the switches are open or closed. The state of each of the separate legs of switches also affects the polarity of the signal.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 8, 18 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mulhauser (U.S. 6,208,896). Mulhauser discloses the claimed invention but does not disclose expressly the non-polar capacitor. It would have been an obvious matter of design choice to a person of ordinary skill in the art to modify the switch amplifier as taught by Mulhauser, with the non-polar capacitor, because the applicant has not disclosed the non-polar capacitor provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected the applicant's invention to perform equally well with the capacitor as taught by Mulhauser, because it is able to provide an output voltage to the switch amplifier in such a way as to control the waveform of the signal. Therefore, it would have been an obvious matter of design choice to modify Mulhauser's switch amplifier to obtain the invention as specified in the claim.

14. Claims 12, 19 and 24 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Mulhauser (U.S. 6,208,896). The examiner considers that the leg of the H-bridge can comprise either the two sides comprising two switches or the four sides, each comprising one switch. In this case, then each leg has both polarity control and output voltage modulation. However, in the

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case that a third leg comprises two additional switches, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Mulhauser to include a third leg with two additional switches, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8. See MPEP § 2144.04. It should be noted that the use of a third leg including another set of two switches teaches away from the concept of using an H-bridge as an output control.


Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Malamud whose telephone number is (571) 272-2106. The examiner can normally be reached on Monday-Friday, 8.00am-5.30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pezzuto can be reached on (571)272-6996. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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